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INFRARED AND OPTICS DIVISION

19 September 1973

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National Aeronautics and Space Administration
Johnson Space Center
Principal Investigator Management Office
Houston, Texas 77058

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semination of Earth Resources Survey
Program information and without liability
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ATTN: Mr. Timothy White/TF6

Subject: Second Quarterly Progress Report, 1 June through 31 August 1973
Contract NAS9-13281

Gentlemen:

The subject contract covers an investigation whose objective is to demonstrate and evaluate oil pollution detection and monitoring from space utilizing sensors of the Earth Resources Experiment Package of SKYLAB. Complementary funding for the technical effort is being provided by the U.S. Coast Guard under Contract DOT-CG-24,063-A. All technical aspects of the program are being fully reported to both NASA and the Coast Guard.

PROGRESS

Modification to ERIM's atmospheric radiative transfer model to allow calculations using maritime haze phase functions were substantially completed during the reporting period. The modified algorithm employs a single-scattering phase function derived from a weighted averaging of continental and maritime polydisperse single-scattering phase functions. Analytically,

$$p(\cos\chi) = W_c p_c(\cos\chi) + W_m p_m(\cos\chi)$$

where $W_c + W_m = 1$

and W_c , W_m are the weighting functions for continental and maritime conditions, respectively and $p_c(\cos\chi)$ and $p_m(\cos\chi)$ are the corresponding phase functions. The values for the phase functions are taken from Deirmendjian's tabulations. With the modified algorithms the capability will exist to calculate transmittance, irradiance and radiance functions for varying geographical conditions.

At this time, no EREP coverage of a significant oil pollution incident is known to have occurred. Also, previously requested sample data tapes for testing our data formatting software have not been received.

(E73-11016) [OIL POLLUTION DETECTION AND
MONITORING FROM SKYLAB EREP] Quarterly
Progress Report, 1 Jun. - 31 Aug. 1973
(Environmental Research Inst. of Michigan)
2 p HC \$3.00

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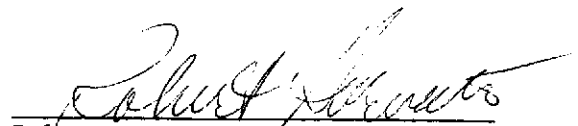
PLANS

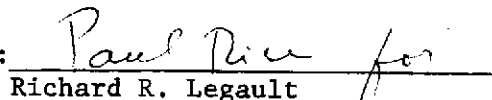
During the next quarter, atmospheric model modifications will be completed and tested. Formatting software will be completed and tested upon receipt of sample S192 CCTs.

TRAVEL

No travel was accomplished under this contract during the reporting quarter. No firm plans exist for travel during the next quarter.

Respectfully submitted:


Robert Horvath
Principal Investigator

APPROVED BY: 
Richard R. Legault
Director,
Infrared and Optics Division

RH:RRL:bae